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EXAMINER
LUONG, VINH

ART UNIT	PAPER NUMBER
3682	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 10/608,174	Applicant(s) JACOBS ET AL.	
	Examiner Vinh T. Luong	Art Unit 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *6,16 and 20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-15,17-19 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *6/26/03 & 5/1/06* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Vinh T. Luong
Primary Examiner

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The Response filed on May 1, 2006 has been entered.

2. Applicant's election without traverse of the species of Figs. 1-4, 6, and 7 in the reply filed on December 12, 2005 is acknowledged.

3. Claims 6, 16, and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on December 12, 2005.

4. The drawings were received on May 1, 2006. These drawings are not accepted by the Examiner because the cross section, such as, Fig. 3 or 5 must be set out and draw to show all of the materials as they are shown in the view from which the cross section was taken. 37 CFR 1.84(h)(3). For example, the material of the bearing cartridge 308 is not shown in Figs. 3 and 5.

5. The *original* drawings are objected to because:

(a) The drawings are inconsistent with the specification, *e.g.*, paragraph [0023] of the specification describes the reaction wheel structure 216, however, the drawings do not show the referential numeral 216; and

(b) The cross section, such as, Fig. 3 or 5 must be set out and draw to show all of the materials as they are shown in the view from which the cross section was taken. 37 CFR 1.84(h)(3). For example, the materials of the races 304, 306, 308 are required to be shown by proper hatchings.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. See paragraph 3 of the Office action on January 31, 2006.

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-5, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Perni et al. (EP 1 134 443 A2 cited by Applicant).

Regarding claim 1, Perni teaches a vibration damping device, the vibration damping device comprising:

a) a piezodynamic damping spacer 22, the piezodynamic damping spacer 22 coupled to a bearing 10 (Figs. 1, 6, and 7) in a momentum control device 2 (Fig. 1), the piezodynamic damping spacer 22 configured such vibrations in the bearing 10 are absorbed by the piezodynamic damping spacer 22 and converted to electrical energy; and

b) a tuning system 4-7 (Fig. 8) electrically coupled to the piezodynamic damping spacer 22, the tuning system 4-7 providing selective control of a resonant frequency S5, S6 (Fig. 3) of the vibration damping device such that the vibration damping device (Fig. 6) absorbs vibrations in a selected frequency range (Figs. 7 and 8). *Ibid.*, paragraph [0028] and claims 1-14.

Regarding claim 2, the piezodynamic damping spacer 22 is located adjacent the bearing 10 (Figs. 1, 6, and 7).

Regarding claim 3, the bearing 10 comprises a duplex bearing pair 43 and 44 and wherein piezodynamic damping spacer 22 is located between the duplex bearing pair 43 and 44.

Regarding claim 4, the piezodynamic damping spacer 22 comprises a ring shaped spacer 22 having a thickness as seen in Fig. 1.

Regarding claim 5, the piezodynamic damping spacer 22 comprises a piezoelectric material. See paragraph [0019].

Regarding claim 7, the momentum control device 2 comprises a reaction wheel 2 (Fig. 1).

Regarding claim 8, the momentum control device 2 comprises a control moment gyroscope 2.

8. Claims 1, 9-15, 17-19, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kudo et al. (US Patent No. 6,286,374 B1).

Regarding claim 1, Kudo teaches a vibration damping device, the vibration damping device comprising:

a) a piezodynamic damping spacer 22, 23 the piezodynamic damping spacer 22, 23 coupled to a bearing 10 in a momentum control device 100, the piezodynamic damping spacer 22, 23 configured such vibrations in the bearing 10 are absorbed by the piezodynamic damping spacer 22, 23 and converted to electrical energy; and

b) a tuning system (Figs. 2 and 3) electrically coupled to the piezodynamic damping spacer 22, 23, the tuning system providing selective control of a resonant frequency S5 (Fig. 3) of the vibration damping device such that the vibration damping device absorbs vibrations S4 (Figs. 3 and 6-8) in a selected frequency range (Fig. 7). *Ibid.*, col. 6, line 18 through col. 10, line 35 and claims 1-14.

Regarding claim 9, the tuning system includes an operational amplifier 31, 35, 38 (Fig. 2) to implement a tunable inductor to provide the selective control of the resonant frequency.

Regarding claim 10, the tuning system includes an input (Fig. 2) to receive sensor data (of sensor 29 in Figs. 2 and 9) indicating an operational speed of the momentum control device.

Regarding claim 11, the tuning system adjusts the resonant frequency in response to the sensor data. See, *e.g.*, Fig. 3.

Regarding claim 12, a vibration sensor circuit (Fig. 2) is electrically coupled to the piezodynamic damping spacer 22, 23 to measure vibrations in the bearing 10.

Regarding claim 13, the vibration sensor circuit (Fig. 2) provides a vibration frequency output to tuning circuit, the vibration frequency output (Fig. 6) proportional to a frequency of the measured vibrations in the bearing 10.

Regarding claim 14, Kudo teaches a vibration damping device for reducing vibrations in a momentum control device 100, the vibration damping device comprising:

a) a piezodynamic damping spacer 22, 23, the piezodynamic damping spacer 22, 23 coupled to a bearing 10 in the momentum control device 100, the piezodynamic damping spacer 22, 23 configured such that vibrations in the bearing 10 are absorbed by the piezodynamic damping spacer 10 and converted to electrical energy;

b) a sensor circuit (Fig. 2), the sensor circuit electrically coupled to at least a portion of the piezodynamic damping spacer 22, 23 to measure the vibrations absorbed by the piezodynamic damping spacer 22, 23, the sensor circuit providing a vibration frequency output proportional to a measured frequency of the vibrations (Fig. 3); and

c) a tuning system (Figs. 2 and 3) electrically coupled to the piezodynamic damping spacer 22, 23, the tuning system receiving the sensor output and providing selective control of a resonant frequency S5, S6 (Fig. 3) of the vibration damping device, the tuning system adjusting the resonant frequency S5, S6 (Fig. 3) of the vibration damping device such that the vibration damping device efficiently absorbs vibrations in the measured frequency of the vibrations (Figs. 6-8). *Ibid.*, col. 6, line 18 through col. 10, line 35, and claims 1-14.

Regarding claim 15, the piezodynamic damping spacer comprises a ring shaped spacer 23 having a thickness, and wherein the piezodynamic damping spacer 23 absorbs the vibrations by changes in the thickness.

Regarding claim 17, the tuning system includes an operational amplifier 31, 35, 38 (Fig. 2) to implement a tunable inductor to provide the selective control of the resonant frequency.

Regarding claim 18, Kudo teaches a vibration damping device for reducing vibrations in a momentum control device 100, the vibration damping device comprising:

a) a piezodynamic damping spacer 23, 22, the piezodynamic damping spacer 23, 22 coupled to a bearing 10 in the momentum control device 100, the piezodynamic damping spacer 23, 22 configured such that vibrations in the bearing 10 are absorbed by the piezodynamic damping spacer 23, 22 and converted to electrical energy;

b) a sensor input 29 (Fig. 2) to receive sensor data indicating an operational speed of the momentum control device 100; and

c) a tuning system (Figs. 2 and 3) electrically coupled to the piezodynamic damping spacer 23, 22, the tuning system receiving the sensor data and providing selective control of a resonant frequency of the vibration damping device in response to the sensor data, the tuning system adjusting the resonant frequency S5, S6 (Fig. 3) of the vibration damping device (Fig. 6) such that the vibration damping device efficiently absorbs vibrations created by the momentum control device at the operational speed 29 (Fig. 2)

Regarding claim 19, the piezodynamic damping spacer 23 comprises a ring shaped spacer 23 having a thickness, and wherein the piezodynamic damping spacer 23 absorbs the vibrations by changes in the thickness.

Regarding claim 21, the tuning system includes an operational amplifier 31, 35, 38 to implement a tunable inductor to provide the selective control of the resonant frequency.

9. Claims 1-5, 7, 8, 14, and 15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5, 7, 8, 17, and 18 of copending Application No. 10608176 (hereinafter Appl.'176). Although the conflicting claims are not identical, they are not patentably distinct from each other because the two applications recite essentially same structures. In fact, Applicant apparently uses different terminology in order to claim essentially the same invention. *In re Griswold*, 150 USPQ 804 (CCPA 1966). For example, see the comparison of claim 1 of this application and claim 1 of Appl.'176 below:

Common	Appl.'174	Appl.'176
a piezodynamic spacer		
a bearing		
	tuning system	control system

The tuning system claimed in this application inherently is the control system since when the tuning system absorbs the vibrations, it inherently selectively controls the preload on the bearing. This fact is well known as seen, *e.g.*, in Figs. 2-8 US Patent No. 6,286,374 issued to Kudo and other references cited in the record. It would have been obvious to one having ordinary skill in the art to use the tuning system claimed in this application as the control system claimed in Appl.'176 as taught or suggested by common knowledge in the art.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: GLTRS (Glenn Technical Reports Server: Transient Vibration Prediction for Rotors on Ball Bearings Using Load-Dependent Non-Linear Bearing Stiffness), Michael E. Evert et al. (Active Vibration Isolation System for Launch Load Alleviation), Sandercock'504 (col. 1 line 8 through col. 2, line 25), Sandercock'415 (load and vibration), Bullard (vibration and load 3), and Olson (amplifier, vibration, and mass/load).

11. Applicant's arguments filed May 1, 2006 have been fully considered but they are not persuasive.

DRAWINGS

The objection to the drawings is reiterated because, *e.g.*, the cross-sectional views in Figs. 3 and 4 do not show the material of which the bearing cartridge 208 is made as required by 37 CFR 1.84(h)(3).

CLAIMS

The previous rejection is withdrawn in view of the amendment.

35 USC 102

Perni et al.

Applicant contended that Perni fails to teach a momentum control device.

At the outset, the Examiner respectfully submits that Perni is cited as an X reference in Applicant's corresponding PCT application, *i.e.*, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone under PCT rules.

In the instant case, Applicant apparently uses an "*ipsissimis verbis*" test that requires the same terminology in the art in order to find anticipation. See footnote 11 of *AKZO N.V. v. International Trade Commission*, 1 USPQ2d 1241, 1245 (CAFC 1986). The law allows an inventor to be his/her own lexicographer. More importantly, it is well settled that an anticipatory reference needs not duplicate word for word what is in the claims. Anticipation can occur when a claimed limitation is "inherent" or otherwise implicit in the relevant reference. See *Standard Haven Products Inc. v. Gencor Industries, Inc.*, 21 USPQ2d 1321, 1328 (Fed. Cir. 1991). Put in another fashion, an anticipatory reference needs not provide such explanation to anticipate what artisan would know as evidenced by standard textbook. *In re Opprecht*, 12 USPQ2d 1235 (Fed. Cir. 1989). Further, it is well settled that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Anticipation law requires distinction be made between invention described or taught and invention claimed. It does not require that the reference "teach" what subject patent application teaches, it is only necessary that the claim under attack, as construed by the Court, "*read on*" something disclosed in the reference, *i.e.*, all limitations of the claim are found in reference, or are "*fully met*" by it. *Kalman v. Kimberly Clark Corp.*, 218 USPQ 781, 789 (CAFC 1983).

In the instant case, Perni does not need to use the term "a momentum device" as Applicant uses. In addition, the attached standard Physics text book, such as, *Halliday Resnick, Physics, Parts I & II, 1967*, pp 299-311, provides the explanation that the rigid body such as the body 2 of Perni is subjected to angular momentum when it rotates about its axis. Since Perni's device 2 is for measuring and adjusting pre-loading on bearings, mounting and operating loads,

etc. as explicitly described in the abstract, columns 1-4, claims 1-14, and since Perni's device 2 is inherently subjected to the angular momentum based on standard knowledge from textbook, thus, it "reads on" the claimed "momentum device."

Second, Applicant asserts "[i]n contrast, momentum control devices, as described in applicant's specification, are *used to* provide attitude control to spacecraft and other vehicles." (Emphasis added).

Note that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). See also *In re Schoenwald*, 22 USPQ2d 1671 (CAFC 1992). In addition, functional limitations of a claim may not be given patentable weight where those limitations are inherent in a prior art reference. *In re Schreiber*, 44 USPQ2d 1429 (CAFC 1997).

In this case, Perni's device is useable in spacecraft in order to provide attitude control to spacecraft and other vehicles. Further, Applicant's contention is not based on the limitations appearing in the amended claim. Indeed, Applicant's claims do not mention about the spacecraft and other vehicles. Therefore, these arguments are immaterial to the patentability of the claims. *In re Self*, 213 USPQ 1, 5 (CCPA 1982).

Third, Applicant argued that Perni fails to teach a tuning system that provides "selective control of a resonant frequency of the vibration damping device" such that "the vibration damping device absorbs vibrations in a selected frequency range."

The Examiner respectfully submits that Perni's control unit 4 is used to measure and adjust the load conditions of the system 2. See paragraph [0028] and claims 1-14. By adjusting or controlling the load conditions, Perni simultaneously control the resonant frequency of the damping device 22 because the vibration is proportional to the load. This fact is notoriously well known as evidenced by vibration engineering technical literature. See, *e.g.*, *NASA Glenn Technical Reports Server* dated August 2002 cited. Another example, Figs. 6 and 8 of Kudo show that the vibration is proportional to the mass or load. On the other hand, Applicant's claim language, such as, the vibration damping device absorbs vibrations in a selected frequency range, merely states the inherent results of limitations in the claim, thus, that language adds nothing to the claim's patentability or substance. See "wherein" or "whereby" clause in *Texas Instruments Inc. v. International Trade Commission*, 26 USPQ2d 1018 (Fed. Cir. 1993); *Griffin v. Bertina*, 62 USPQ2d 1431 (Fed. Cir. 2002); and *Amazon.com Inc. v. Barnesandnoble.com Inc.*, 57 USPQ2d 1747 (Fed. Cir. 2001).

Therefore, assuming *arguendo* that Perni "says nothing about controlling the resonant frequency of the device such that vibrations are absorbed" as alleged by Applicant, however, standard knowledge from text books, technical literature, or prior art such as Kudo reference explain that Perni's device inherently performs or is capable to perform the claimed functional statements. Thus, Applicant's claims are anticipated by Perni. *In re Schreiber, supra.*

Kudo et al.

First, in the same line of arguments, Applicant asserts that Kudo fails to teach a momentum control device.

Kudo as well as Perni does not need to use the term "a momentum device." Moreover, standard Physics text book, such as, *Halliday Resnick, supra* provides the explanation that virtually any rigid body such as the body 100 of Kudo is subjected to angular momentum when it rotates about its axis. Since Kudo's device 100 is for measuring and adjusting pre-loading on bearings, mounting and operating loads, *etc.* as explicitly described in, *e.g.*, the abstract, summary of invention, claims 1-14, and since Kudo's device 100 is inherently subjected to the angular momentum based on standard knowledge from textbook, thus, it is the so-called "momentum device."

Similarly to Perni, with respect to Applicant's arguments that Kudo fails to teach the use of a vibration damping device in a momentum control device, the law is well settled that when all of the elements of the claim are found in one prior art reference, the claim is invalid, and the invention is said to be anticipated as a matter of law. This is true, even if the intended use of the anticipating device is different from the intended use of the claimed device. *Mathis v. Hydro Air Industries*, 1 USPQ2d 1513, 1523 (DC C Calif. 1986) and cases cited therein. See also *In re Casey*, *In re Otto*, and *In re Schoenwald, supra.* Therefore, Applicant's arguments relied on intended use is unpersuasive.

Second, Applicant disagreed that Kudo does teach a tuning system that controls the resonant frequency of the vibration damping device such that vibrations are absorbed, *etc.*

The Examiner respectfully submits that Kudo teaches the control unit 30 used to measure and adjust the preload condition of the system 100. See Kudo's Summary of the Invention, Figs. 2-8, and claims 1-14. By adjusting or controlling the load conditions, Kudo simultaneously control the resonant frequency of the damping device 22, 23 since the vibration is proportional to

the load. This fact is evidenced by Kudo's Figs. 2-8 and the description in col. 7, line 10 through col. 10, line 35. On the other hand, Applicant's claim language, such as, the vibrations in the bearing are absorbed by the piezodynamic damping spacer, merely states the inherent results of limitations in the claim, thus, it adds nothing to the claim's patentability or substance. See *Texas Instruments Inc. v. International Trade Commission*, *Griffin v. Bertina*, and *Amazon.com Inc. v. Barnesandnoble.com Inc.*, *supra*. Therefore, Applicant's claims 1, 14, and 18 are anticipated by Kudo as set forth by legal precedents.

Third, Applicant contended that Kudo does not teach the reaction wheel in claim 7. However, claim 7 is not rejected by Kudo as seen on page 4 of the Office action on January 31, 2005. Thus, this contention is not germane to the rejection at issues.

Fourth, Applicant asserted that Kudo does not teach the amplifier to implement a tunable inductor to provide the selective control of the resonant frequency in claims 9, 17, or 21.

The instant assertion is likewise unsupported by substantial evidence in the record. In fact, Fig. 2 of Kudo shows that Kudo uses the load cell amplifier 31, power amplifier 35, and amplifier 38. These amplifiers are used to control the preload of the bearing. The vibration or frequency in turn is dependent on the load as evidenced by technical literature cited, *e.g.*, *Glenn Technical Reports Server* and by the mathematical equations presented in columns 9 and 10 of Kudo.

For the foregoing reasons, Applicant's claims 1, 9-15, 17-19, and 21 are unpatentable over Kudo.

In addition, the Examiner respectfully submits that the device disclosed in copending Application No. 10/608,176 (Appl.'176) is strikingly similar, if not identical to the device

disclosed in this Application. However, the claims in copending Appl.'176 call for a control system that provides selective control of the preload on the bearings, meanwhile, the claims in this application call for vibration damping. Since the device disclosed in Appl.'176 provides selective control of the preload on the bearings *in the same manner as Perni or Kudo*, and since the claimed device in Appl.'176 can be used for control vibration as claimed in this application, therefore, the device of Perni or Kudo can also be used for control vibration in the same manner as the device claimed in this application and/or Appl.'176.

Obviousness-type Double Patenting

Applicant contended the claims in copending Appl.'176 call for a control system that provides selective control of the preload on the bearings, with no mention of vibration, *i.e.*, completely different purpose and implementation, therefore, they are patentably distinct.

The Examiner respectfully submits that the device disclosed in Appl.'176 is strikingly similar, if not identical to the device disclosed in this Application. There is a reason to believe, based on the similarities of the devices disclosed in this Application and Appl.'176, that the functional limitations recited in the claims of Appl.'176 may be an inherent characteristics of the device in this Application or *vice versa*. See the evidence presented in, e.g., technical publication cited herein and Kudo reference. In accordance with *In re Best,* 195 USPQ 430, 433 (CCPA 1977) cited in MPEP 2112:

> Where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possess the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

Accordingly, Applicant is respectfully urged to prove that the functional limitations claimed in this application are not inherent characteristics of the claimed device in Appl.'176 or *vice versa*.

Notwithstanding the above facts, Applicant contended that the claims in this application call for different purposes, *i.e.*, different intended uses. Based on legal precedents, the intended use statements in the claims of Appl.''76 and the claims of this application do not provide patentable distinguishing structures over each other. *Mathis v. Hydro Air Industries*, *In re Casey*, *In re Otto*, and *In re Schoenwald, supra.* Therefore, the obviousness type double patenting rejection is respectfully maintained.

Lastly, Applicant argued that the Examiner has not provided the evidence to prove that the absorbing vibration inherently controls the preload or *vice versa*. The Examiner respectfully hereby provides the cited technical literature, such as, the technical papers "Active Vibration Isolation System for Launch Load Alleviation" of Evert et al. and of NASA GLTRS, plus the US Patents issued to Sandercock, Bullard, and Olson to prove the instant well known fact. See also the prior art cited in copending Appl.'176.

For the foregoing reasons, the previous rejections are maintained.

12. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinh T. Luong whose telephone number is 571-272-7109. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luong

June 20, 2006

Vinh T. Luong
Primary Examiner